

ABSTRACT

A dielectric rod antenna assembly for a level measurement system. The antenna assembly includes a transition structure housed within a coupling sleeve. The transition structure includes a short-circuited waveguide filled with a dielectric material and an exciter element projecting through the waveguide into the material.

5 The transition structure directs electromagnetic energy through the bottom of the dielectric material into a rod antenna attached to the bottom of the coupling sleeve for propagation within the container. The dielectric material includes a longitudinal axial bore having a tapered tip to provide a dielectric-lined waveguide. The bottom

10 end of the dielectric is encircled with a metal ring of a diameter larger than the dielectric to smooth the transition into the rod antenna.